

REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested. Claims 11 and 16 are amended and new claim 20 is added. Claims 1-3 and 5-20 are unchanged and remain pending in the application. A Request for Continued Examination is concurrently submitted along with the requisite fee.

Claims 1-3, and 5-8 stand rejected under §103 in view of U.S. Patent No. 6,243,667 to Kerr et al. in view of U.S. Patent No. 6,091,725 to Cheriton et al. Claim 9 stands rejected under §103(a) in view of Kerr, Cheriton et al., U.S. Patent No. 5,949,786 to Bellenger, and U.S. Patent No. 5,640,399 to Rostoker. Claim 10 stands rejected under §103(a) in view of Kerr, Cheriton et al., and U.S. Patent No. 6,118,760 to Zaumen. Claims 11, 14, and 15 stand rejected under §103(a) in view of Kerr and Zaumen. Claims 12, 13, and 16-18 stand rejected under §103 in view of Kerr et al., Zaumen et al., and Cheriton et al. Claim 19 is rejected in view of Kerr et al., Zaumen et al., Cheriton et al., Bellenger, and Rostoker et al.

All of the above rejections are traversed. The comments from the response filed January 8, 2004 and March 26, 2004 are incorporated in their entirety herein by reference.

The Advisory Action recites repeated quotes from Newton's telecom dictionary. In order to enable Applicant to fully consider the quotes, Applicant requests that the Examiner provide a copy of the relevant pages of Newton's telecom dictionary relied upon with appropriate citation using PTO Form 892, as required under 37 CFR 1.104(d), to ensure the quotes are of record in this application.

The Advisory Action (and the prior rejections) fails to acknowledge the explicit claim language: the Advisory Action stresses the term “key” in order to assert that a “set of characters” (also referred to as “set of bits”) is generated. However, neither the claims nor the applied references provide any discussion whatsoever of “set of characters” or combined set of characters.

The Advisory Action further mischaracterizes the reference and the claims by asserting that “Kerr suggests a combination [sic] in order to generate the set of characters.” The Advisory Action also asserts that “Applicant discloses [sic] generating a “signature”, which is a set of characters [sic] used to identify data” and that “Applicant discloses [sic] particular steps taken in order to generate the set of characters. Specifically, the set of characters is generated by combining two keys, where a key is a set of characters from a packet [sic].” Such mischaracterizations disregard the explicit claim limitations and the explicit teachings of the references.

Claim 1 (and claim 16) explicitly specifies that first and second hash keys are generated according to a prescribed hash function in response to first and second layer 3 information within the received data packet, respectively. The signature is generated based on “combining the first and second hash keys”. Hence, claim 1 specifies both a hash key and a signature.

Kerr et al. discloses a single flow key 310 that is generated from the network layer address header of a received packet 150 in order to identify whether the packet belongs to an identified flow generating a unique hash key by each of the routing devices that receives the first plurality of messages, the unique hash key being based upon the address of the selected source device, the address of the selected destination device, a port number associated with the selected source device, a port number associated with the selected destination device, and a protocol type corresponding to the first plurality of messages.

(See claims 1, 11, 16 at col. 10, lines 41-48, col. 11, line 64 et seq. and col. 16, lines 48-59, respectively).

Further, col. 12, lines 5-6 further claim “wherein said first one of said message flows is identified by the unique hash key.”

The only other reference to “hash” is at col. 4, lines 8-11, which describe that “the routing device 140 determines a hash table key responsive to the flow key 310.”

It is noted that the Advisory Action stresses non-limitations (“key”) without addressing the explicit claim language or the explicit teachings of Kerr as cited by Applicant.

Cheriton et al. generates a single hash from layer 2 information. As argued previously, the portion of Cheriton et al. cited by the Final Action (col. 9, lines 48-60) refutes the very position asserted by the Final Action:

Referring now to FIG. 7, the specific hash function logic is the bitwise Exclusive-OR 703 between the low-order 15 bits of the destination address 701 and the source address 702 of the Virtual Path Index 630.

Moreover, the Advisory Action mischaracterizes Cheriton et al. using inconsistent interpretations: the Advisory Action first argues that “Examiner relies on Cheriton to teach a specific hashing routine” but then argues that mere retrieval of data is a hash key:

Cheriton discloses that a hash expression can be generated by taking [sic] the lower order bits of one address field (**first hash key**) [sic] and Exclusive ORing these bits with the lower order bits of another address field (**second hash key**) to form a single hash expression (signature). Thus the combination suggests generating a layer 3 hash signature by combining **the lower order bits of one address field** (first hash key) and Exclusive ORing these bits with **the lower order bits of another address field** (second hash key).

(Paragraph 4 of Advisory Action).

This interpretation is unreasonable per se: “taking” is not performing a hashing operation, but reading the data from the packet. As shown above Cheriton explicitly specifies that the

specific hash function is the bitwise Exclusive-OR 703 between the lower order 15 bits of the destination address 701 and the source addresss 702, resulting in a single hashed value 632.

Also note that the reference to “other hash functions” in Cheriton refers to an alternative to the Exclusive-OR operation, and not hashing different layers, since Cheriton is directed to evaluating the virtual path index in the datagram header (see col. 6, lines 54-67; col. 7, lines 1-9; col. 9, lines 34-60).

There is no disclosure or suggestion in Kerr or Cheriton, singly or in combination, that two separate hash keys would be combined to form a signature, as claimed. Both Kerr and Cheriton disclose that only a single hash key is used as an index for searching a table. The fact that the references use different parameters to generate the single hash key is inconsequential: one skilled in the art would conclude no more that only a single hash key is used as an index for searching a table: the Kerr teaching would use the single hash key (based on network layer address header information) to search a layer 3 table, whereas the Cheriton teaching would use the corresponding single hash key (based on datagram header information) to search a layer 2 table. “The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” In re Fritch, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992).

An evaluation of obviousness must be undertaken from the perspective of one of ordinary skill in the art addressing the same problems addressed by the applicant in arriving at the claimed invention. Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, 23 USPQ 416, 420 (Fed. Cir. 1986), cert. denied, 484 US 823 (1987). Thus, the claimed structures and methods cannot be divorced from the problems addressed by the inventor and the benefits resulting from the claimed

invention. In re Newell, 13 USPQ2d 1248, 1250 (Fed. Cir. 1989). There is no disclosure or suggestion in the hypothetical combination of the problems encountered and benefits discovered by the inventors in reaching the claimed invention (see, e.g. page 3, lines 9-15, page 5, line 36 to page 6, line 25, page 9, lines 18-23 of the specification).

Hence, the hypothetical combination does not disclose or suggest generating two hash keys according to a prescribed hash function, and then combining the first and second hash keys into a signature, as claimed.

For these and other reasons, the rejection of claims 1-3 and 5-8 should be withdrawn.

Claim 9 is believed allowable in view of the foregoing.

Claim 10 recites (in part and based on incorporating claim 1):

searching a table, configured for storing layer 3 signatures that index respective layer 3 switching entries, ... for the selected selected layer 3 switching entry ... further comprising forwarding an identifier specifying the selected layer 3 switching entry from a network switch port, having received the data packet, to layer 3 switching logic within the network switch.

Hence, the claim language specifies that the identifier is used to specify the selected layer 3 switching entry. Moreover, claim 10 specifies that the identifier is sent from the network switch port having received the data packet; hence, claim 10 requires that the generating and combining (and matching of the signature of the packet with the corresponding layer 3 signature indexing the layer 3 switching entry) be performed in the network switch port. The hypothetical combination neither discloses nor suggests this feature.

Hence, the rejection of claim 10 should be withdrawn.

Independent claims 11 and 16 have been amended to explicitly specify that the integrated network switch includes a plurality of network switch ports and that the integrated network switch is implemented on a single chip.

Hence, the rejection should be withdrawn because the subsystems 110, 120 in Zaumen are not network switch ports in an integrated network switch on a single chip, as claimed. In other words, each subsystem (e.g., 110, 120) cannot be considered as a single port because the subsystems 110 are connected by a PCI bus (see col. 5, lines 22-24), hence the subsystems 110, 120 cannot reside on a single chip if a PCI bus is used for interconnections. Zaumen neither discloses nor suggests any processing within a given network switch port, as claimed.

For these and other reasons, the rejection of claims 11, 14, 15, as well as the rejection of claims 12, 13, 16-18, should be withdrawn.

Claim 19 is rejected in view of Kerr et al., Zaumen et al., Cheriton et al., Bellenger, and Rostoker et al. It is believed this dependent claim is allowable in view of the foregoing.

In view of the above, it is believed this application is in condition for allowance, and such a Notice is respectfully solicited.

To the extent necessary, Applicant petitions for an extension of time under 37 C.F.R.

1.136. Please charge any shortage in fees due in connection with the filing of this paper, including any missing or insufficient fees under 37 C.F.R. 1.17(a) or 1.17(e), to Deposit Account No. 50-0687, under Order No. 95-333, and please credit any excess fees to such deposit account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'L R Turkevich', with a stylized flourish at the end.

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Date: April 26, 2004